

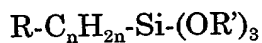
What is claimed is:

1. A ceramic electronic device comprising:

a ceramic element;

an external electrode on said ceramic element; and

5 a protective layer on said ceramic element and external electrode, said protective layer being formed through impregnating a compound into said ceramic element and external electrode and through dehydration-condensation, said compound being expressed by a formula of:



10 where R is an epoxy group, alkyl group, aryl group, perfluoroaryl group, or mixture thereof, n is a natural number, and R' is an alkyl group having 1 to 4 carbon atoms, hydrogen, or halogen atom, wherein at least one of R' is hydrogen.

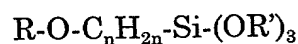
15 2. A ceramic electronic device according to claim 1, wherein the ceramic element is a sintered dielectric material.

3. A ceramic electronic device comprising:

a ceramic element;

20 an external electrode on said ceramic element; and

a protective layer on said ceramic element and external electrode, said protective layer being formed through impregnating, into said ceramic element and external electrode and through dehydration-condensation, said compound being expressed by a formula of:



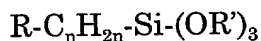
25 where R is an epoxy group, alkyl group, aryl group, perfluoroaryl group, or mixture thereof, n is a natural number, and R' is an alkyl group having 1 to 4

carbon atoms, hydrogen, or halogen atom, wherein at least one of R' is hydrogen.

4. A ceramic electronic device according to claim 3, wherein the  
5 ceramic element is a sintered dielectric material.

5. A method of manufacturing a ceramic electronic device,  
comprising the steps of:

10 providing a ceramic electronic device including a ceramic element and  
an external electrode on the ceramic element;  
plating the external electrode;  
immersing the ceramic electronic device into a solution containing a  
compound expressed by a formula of:



15 where R is an epoxy group, alkyl group, aryl group, perfluoroaryl group, or  
mixture thereof, n is a natural number, and R' is an alkyl group having 1 to 4  
carbon atoms, hydrogen, or halogen atom, wherein at least one of R' is  
hydrogen; and

20 taking out the immersed ceramic electronic device from the solution  
and subjecting the ceramic electronic device to heat treatment.

6. A method according to claim 5, wherein said step of providing  
the ceramic electronic device includes the sub-steps of:

25 forming the ceramic element through stacking an internal electrode  
and a ceramic layer; and

forming the external electrodes on the ceramic element, being  
electrically connected to the internal electrode.

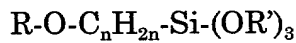
7. A method of manufacturing a ceramic electronic device comprising the steps of:

providing a ceramic electronic device including a ceramic element and

5 an external electrode on the ceramic element;

plating the external electrode;

immersing the ceramic electronic device into a solution containing a compound expressed by a formula of:



10 where R is an epoxy group, alkyl group, aryl group, perfluoroaryl group, or mixture thereof, n is a natural number, and R' is an alkyl group having 1 to 4 carbon atoms, hydrogen, or halogen atom, wherein at least one of R' is hydrogen; and

taking out the immersed ceramic electronic device from the solution

15 and subjecting the ceramic electronic device to heat treatment.

8. A method according to claim 7, wherein said step of providing the ceramic electronic device includes the sub-steps of:

forming the ceramic element through stacking an internal electrode

20 and a ceramic layer; and

forming the external electrode on the ceramic element, being electrically connected to the internal electrode.